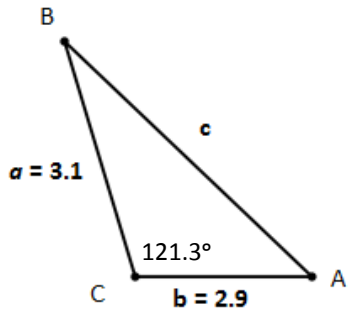


### 3.18 Law of Cosines & Area of Triangles

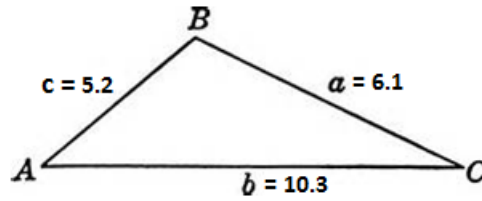
Name \_\_\_\_\_ Date \_\_\_\_\_ Period \_\_\_\_\_

Solve each triangle. Round to the nearest tenth.

1.



2.



Solve each triangle with the given information. Round to the nearest tenth.

3.  $a = 6.8, c = 2.4, \beta = 10.5^\circ$

4.  $a = 18.5, b = 12.2, c = 8.1$

5.  $a = 10.3, c = 8.4, \beta = 88^\circ$

6.  $a = 6.3, b = 7.1, c = 6.8$

7.  $a = 7.2, \beta = 25^\circ, \gamma = 35^\circ$

**Determine the number of triangles with the given parts.**

8.  $a = 3, b = 4, c = 7$

9.  $\alpha = 40^\circ, \beta = 60^\circ, c = 10$

**Find the area of each triangle with the given parts. Round to the nearest tenth.**

10.  $a = 12.9, b = 6.4, \gamma = 13.7^\circ$

11.  $\alpha = 42.3^\circ, \beta = 62.1^\circ, c = 14.7$

12.  $\alpha = 56.3^\circ, \beta = 41.2^\circ, a = 9.8$

13.  $\gamma = 74.3^\circ, \beta = 25.6^\circ, b = 17.3$

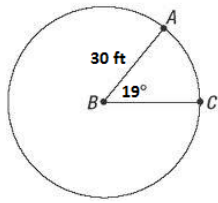
**Find the area of each triangle using Heron's formula. Round to the nearest tenth.**

14.  $a = 16, b = 9, c = 10$

15.  $a = 5.4, b = 8.2, c = 12.0$

**Solve each problem. Draw diagrams if necessary. Show work!**

16. What is the length of a chord intercepted by a central angle of  $19^\circ$  in a circle of radius 30 feet? Round to the nearest hundredth of a foot. (Find AC)



17. The Pentagon in Washington D.C., is 921 ft on each side. What is the distance from a vertex to the center of the Pentagon to the nearest hundredth of a foot?



18. A triangular piece of glass has sides of lengths 13 in., 18 in., and 9 in. Find the area of the triangle without using Heron's formula. Round to the nearest tenth.